Parental Assessment of Peer Play: Development and Validation of the Parent Version of the Penn Interactive Peer Play Scale

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Abstract:

The purpose of this investigation was to evaluate the construct validity of the parent version of the Penn Interactive Peer Play Scale (PIPPS) and to compare it with the teacher version. PIPPS were collected on 297 urban Head Start children. The Parent PIPPS replicated the three-factor solution found with the teacher version, supporting the following constructs of peer play: Play Interaction, Play Disruption, and Play Disconnection. Factor matching and canonical correlational analyses examining the relationship between the parent and teacher versions of the PIPPS revealed significant one-to-one matches between hypothesized like factors. Additionally, analyses of overlapping variance between versions indicated a significant degree of overlap. Implications of the findings for involvement of parents in the assessment process and research on the continuity and discontinuity between home and school environments for low-income, urban children were discussed.

Article:

INTRODUCTION

Head Start, the largest federally funded program committed to children living in poverty, has recently received additional funding to enhance the quality of its services (Epstein, 1993). In formulating program improvements, Head Start recognizes that low-income children today, especially in our large densely populated urban areas, are not only experiencing deep poverty, but the erosion of family and neighborhood social structures as well (U.S. Department of Health and Human Services, 1993). These ecological stressors greatly affect the ability of caregivers to shelter their young children from negative experiences and foster their children's social development. In light of the growing stress on families, Head Start has revised its Performance Standards to further promote involvement of parents in genuine partnerships with Head Start teachers to enhance children's development of social competencies (U.S. Department of Health and Human Services, 1996).

Social competence, a fundamental component of all early childhood education programs, is a capacity that develops both within family relationships and peer relationships. For preschool children, demonstrating social competence with peers is viewed as an essential developmental task that is affected by an interacting combination of variables in a child's environment (Cicchetti & Lynch, 1993; Hart, Olsen, Robinson & Mandelco, 1997). Major developmental theorists (Erikson, 1968; Piaget, 1962) have identified play as a primary context for the acquisition of important social competencies, as play is often the medium through which children build social collaboration skills and learn to coordinate multiple points of view. In a metaanalysis of 46 studies on play and development, Fisher (1992) found that play resulted in significant improvements in children's development, enhancing the progress of early development from 33% to 67% by improving adjustment, and reducing language problems and socioemotional difficulties. Also, significant relationships have been found between preschoolers' levels of sociodramatic play and measures of social competence and peer acceptance (Connolly & Doyle, 1984; Ladd, Price, & Hart, 1990). Longitudinal research indicates that an inability to successfully negotiate the implicit social rules and exchanges with peers in play often results in peer rejection (foie, Dodge, & Kupersmidt, 1990; Hatch, 1987) and detrimental consequences during later developmental periods (Denham & Holt, 1993; DeRosier, Kupersmidt & Patterson, 1994).

To maximize the effectiveness of social competence intervention, partnership efforts with families are essential. This is particularly important for children from low-income and culturally-diverse backgrounds, who often face heightened challenges as they enter school. Because of economic, linguistic, or cultural differences, these children are at greater risk for disparity between their home and school environments. Their transition into schools can be characterized as a significant point of discontinuity (Slaughter-Defoe, 1995). Specifically, social competencies promoted within families and communities may be different from those required at school. Conflicting communication styles or patterns of social interaction complicate adjustment to school and may contribute to learning difficulties (Ogbu, 1988).

Greater continuity between home and school can be achieved by having preschool programs support parents in their childrearing efforts and include them in the early educational experiences of their children (Slaughter-Defoe, 1995). To inform and promote parent involvement, early childhood programs need to develop mechanisms for sharing knowledge between parents and teachers about important emerging competencies, such as interactive peer play behaviors. One way to have parents provide input on their children's play competencies is to use psychometrically sound parent-rating instruments that provide parents with an opportunity to indicate how well their children are functioning at home. To maximize the usefulness of these parent report measures, they should be developed in collaboration with teachers and create a capacity for obtaining reports from home and school on the same salient developmental constructs (Collins, Kinney, & Haran, 1990).

A review of existing instruments for evaluating developmentally appropriate competencies of young children reveals several strengths and weaknesses. Earlier reviews of the psychometric quality of available ratings scales for preschool children characterized these measures as quite poor (i.e., Martin, 1986), especially with regard to low-income or culturally diverse children. Scale developers have frequently failed to include these groups, often a high priority target for early intervention, in the psychometric evaluation of their scales (Fantuzzo, McDermott, Manz, Hampton & Burdick, 1996). However, several new teacher-rating scales addressing young children's socially competent behaviors have been developed and tested with more representative samples (i.e., Social Competence and Behavior Evaluation form; LaFreniere & Dumas, 1995 and Child Behavior Scale; Ladd & Profilet, 1996). Unfortunately, these measures do not currently offer a parallel parent version of their scale to allow for cross-informant assessment of young children's social competencies. The Social Skills Rating System is the only published assessment tool that examines social competence among preschool children and provides both a parent and teacher version (SSRS; Gresham & Elliot, 1990).

Fantuzzo and his colleagues recently investigated the reliability and construct validity of the teacher and parent versions of the SSRS for urban, Head Start children. The evaluation of the teacher version revealed three reliable and distinct factors of global social skills: Self-Control, Interpersonal Skills, and Verbal Assertion (Fantuzzo, Manz, & McDermott, in press). Two factors for the problem behaviors scale were found representing Externalizing Behavior problems and Internalizing Behavior problems. The investigation of the SSRS parent version (Manz, Fantuzzo & McDermott, in press) revealed a two-factor solution of global social skills: Self-Control and Interpersonal Skills, as well as for the problem behaviors: Externalizing Behavior and Internalizing Behavior.

Analyses examining the relationship between the parent and teacher versions of the SSRS did not support the authors' claims that these versions are parallel forms with matching social competency constructs (Manz et al., in press). Canonical correlational analyses failed to yield any significant relationships between hypothesized like parent and teacher factors (e.g., teacher Self-Control factor and parent Self-Control factor or teacher Internalizing Behavior problem factor and parent Internalizing Behavior problem factor). Moreover, higher order analyses of the factors from both versions of the SSRS yielded a one factor solution comprised of just teacher factor loadings. None of the parent SSRS factors, neither the two social skills factors nor the two problem behaviors factors, contributed to this single overall social competence factor. The lack of correspondence between parent and teacher constructs of the SSRS impedes its use as a cross-informant indicator of important social competency constructs. A sound cross-informant rating system for social

competence should empirically demonstrate that hypothesized teacher and parent constructs match, thereby providing the capacity to report common information about these constructs.

Recent research has focused attention towards examining factors associated with congruence of parent report data with teacher or professional assessments. Specifically, researchers have found greater matches among constructs when reports involve current and concrete children's behaviors (Diamond & Squires, 1993). Examples of successful topics for parent report include motor and social tasks, as opposed to cognitive or language tasks (Diamond & LeFurgy, 1992; Schafer, Bell & Spaulding, 1987). Consistency between parent and teacher reports of problem behaviors was greater for more outwardly observable behavior problems rather than symptoms of emotional distress (Achenbach, McConaughy, & Howell, 1987). Additionally, researchers have found that when parents fully understand the assessment items and have had prior opportunity to observe the behaviors they provide more reliable information (Squires, Nickel & Bricker, 1990). Items that are also sensitive to the cultural backgrounds of the intended test-taking population is also recommended by the American Psychological Association (Standard 3.5; American Psychological Association, 1985).

Scale development of quality parent measures also requires a strategy for learning about minority children's social competence that does not impose upon the inquiry process any preconceived, majority-based theories of behavior and development (Ogbu, 1988; Burlew, Banks, McAdoo & Azibo, 1992). Gaskins (1994) recommends four steps to enhance the cultural and developmental validity of psychological measurement for ethnic-minority populations: a hypothesis-generating phase, a category-generating phase, a measure-generating phase, and after data collection—an interpretation-generating phase. Specifically, these phases must target the examination of behavior in the child's natural context. These recommendations for conducting research are consistent with ethological research methods, which have also been endorsed for the study of the play of minority preschool children (Pellegrini, 1992).

An ethological approach is based upon detailed, inductively-derived descriptions of children's behavior in their natural context rather than upon existing theory and categorical systems that are largely noninclusive of nonmainstream groups (Pellegrini, 1992). Ethological methodology calls for a preliminary phase of unstructured observation during that a descriptive base of typical behavior patterns is compiled (Smith & Connolly, 1972). Significant effort is devoted to first describing the phenomena of interest without making judgments about categorization of behaviors. Once a thorough descriptive base is catalogued, factor analytic and/or sequential analytic techniques can be employed to uncover behavioral categories. These categories can eventually become the foundation for the development of measurement tools. Because ethological methods promote the inductive description and categorization of behaviors and minimize the extent to which preconceived, cultureladen conceptualizations are imposed upon the phenomena of interest, they are a sensible first step to conducting research with understudied, nonmainstream populations.

In addressing the need for a congruent assessment tool for both parents and teachers, researchers in collaboration with Head Start teachers and parents developed a rating system, the Penn Interactive Peer Play Scale (PIPPS; Fantuzzo, Sutton-Smith, Coolahan, Manz, Canning & Debnam, 1995). Using ethological methodology, the PIPPS was developed in order to assess social competence among children living in impoverished urban environments who are at high risk for discontinuity between home and school. The teacher and parent versions contain 32 identical items designed to assess competencies within play that differentiate children who demonstrate positive peer relationships from those who are less successful with peers. The teacher version yields a report of play activities at school and in the classroom, while the parent version assesses play activity at home and in the neighborhood.

The PIPPS development process began with intensive observation and coding of the free play activities of Head Start children by parents, graduate research assistants, and teachers. Behaviors that reliably distinguished successful peer play interactions from unsuccessful peer play interactions were identified and subsequently crafted into 4 point Likert-format scale items ("never, seldom, often, always"). These items included descriptions of both positive play behaviors and negative play behaviors which parents and teachers reported

having observed in home or school settings, thus allowing raters to indicate both strengths and weaknesses of Head Start children. Incorporating teacher and parent input into each stage of development of this measure was intended to heighten researchers' sensitivity to meaningful cultural expressions contained within children's play, and to assess play in a child's most predominant contexts—at home and in school.

Studies conducted on the teacher version revealed a three-factor solution, supporting the following constructs of peer play: Play Interaction, Play Disruption, and Play Disconnection (Coolahan, Fantuzzo, McDermott & Mendez, 1998; Fantuzzo, Coolahan, Mendez, McDermott, & Sutton-Smith, 1998; Fantuzzo et al., 1995). Play Interaction emerged as an indication of children's play strengths and includes prosocial items such as comforting and helping other children, showing creativity in play, and encouraging others to join play. Play Disruption consists of items relating to aggressive, antisocial play behaviors while Play Disconnection consists of items describing withdrawn behavior and nonparticipation in peer play. Concurrent validity for the teacher version was established using conceptually related indicators of social competence and school adaptation including teacher report, peer sociometrics and direct play observation data. Children rated high on the Play Interaction factor received high social skills ratings from teachers, and were reported to be engaged in classroom learning activities and cooperative and accepting of teacher assistance. These children also exhibited high levels of cooperative peer play and were well liked by peers. Children who were rated as disruptive in play on the PIPPS were more likely to receive low teacher ratings for self-control and to be engaged in solitary play and not accepted by peers. Finally, children who were rated as disconnected in play were also disengaged from classmates and were viewed as inattentive and passive by their teachers.

The purpose of the present study was to test the construct validity of the parent version of the PIPPS and to compare teacher and parent versions. Specifically, this investigation sought to establish the factor structure for the parent PIPPS, as well as to assess the relationship between the parent version and the teacher version of the PIPPS. The relationship between the two versions was examined in two steps. First, subsequent to the determination of constructs for the parent version of the PIPPS, the match between hypothesized like constructs was assessed. Second, if parent and teacher constructs matched the amount of shared information across parent and teacher reports of peer play was determined. It is hypothesized that the parent version will yield the same robust 3-factor solution as the teacher version, and that like factors will match[1]. This study ultimately addressed the effectiveness of this system to offer information about congruent social competence constructs as reported by parents and teachers regarding children's interactive peer play behavior at home and at school.

METHOD

Description of Sample and Data Collection Procedures

Two hundred and ninety-seven preschool children enrolled in a large central-city Head Start program participated in this study. Demographic data are presented in Table 1. The composition of the sample was predominantly African American (96.3%). Child age ranged from 37 to 64 months *(M* 51.24, *SD* = 6.84), and gender was evenly distributed (52.8% boys, 47.2% girls). Additionally, reports

Table 1. Demographic Information of the Sample

	Percent
Care Provider	
Mother	77%
Father	7%
Step-Parent	4%
Grandparent	8%
Other	4%
Education Level	
Some high school education	34%
High school graduate or GED	32%
Some college	16%
College degree	7%
Vocational school	11%
Marital Status	
Single	59%
Married	26%
Widowed	5%
Separated	4%
Divorced	6%
Employment Status	
Full-time	25%
Part-time	22%
Not employed outside the home	53%

Note: $N = 297$.

showed an average of 2.91 *(SD* = 1.43) children and 2.12 *(SD* = 1.13) adults per household. Care provider age ranged from 18-79 years *(M* = 31.90, *SD* = 9.64), and the majority of respondents were mothers (77.7%). Educational level varied, with most care providers having attained a high school diploma or GED (28.9%) Finally, the majority of caregivers were single (61%) and presently unemployed (56.8%).

The participants were recruited from representative Head Start centers across a major metropolitan area in the Northeast. Demographic composition of the program matched national proportions for urban Head Start programs, with income for 90% of families below $12,000 and most families (64%) having incomes below $6,000. Before contacting children's parents, Head Start parent-leaders and staff reviewed the research objectives. Upon approval, the objectives of the study were explained to parents in 5 Head Start centers, and permission was obtained for child participation. After parents had completed a brief demographic questionnaire, they were asked to complete the PIPPS on their child. The dissemination and collection of measures occurred each week, with graduate research assistants checking the completion of each measure. This collection process yielded 297 completed PIPPS parent ratings.

Measures

Penn Interactive Peer Play Scale (PIPPS; Fantuzzo et al., 1995). The teacher version of the PIPPS was utilized to establish validity for the parent version of the PIPPS. The measure is a 32-item rating scale of preschool children's interactive peer play. Investigations of the reliability and validity of the teacher version (Coolahan et al., 1998; Fantuzzo et al., 1998) revealed three reliable dimensions: Play Interaction, Play Disruption and Play Disconnection (Cronbach' s alpha = .90, .91, and .87, respectively). Play Interaction includes items such as comforting and helping other children, showing creativity in play, and encouraging others to join play. Play Disruption consists of items relating to aggressive, antisocial play behaviors while Play Disconnection consists of items describing withdrawn behavior and nonparticipation in peer play. Concurrent validity for the teacher version was established using conceptually-related indicators of social competence and school adaptation including teacher report, peer sociometrics and direct play observation data. Three teacher rating scales were used to validate the PIPPS: the Social Skills Rating System (SSRS; Gresham & Elliot, 1990), the Preschool Learning Behaviors Scale (PLBS; McDermott, Green, Francis, & Stott, 1996) and the Conners' Teacher Rating Scales-28 (CTRS-28; Conners, 1990).

RESULTS

The empirical investigation of the PIPPS was conducted in three stages. The initial stage tested the construct validity of the parent measure through exploratory factor analyses. The second stage examined the relationship between the parent and teacher structures using factor matching techniques and correlational analysis.

Table 2. Exploratory Factor and Confirmatory Cluster Structures for PIPPS Factors

	Exploratory Analysis		Confirmatory Analysis[c]		
Item Content by factor	Varimax[a]	Promax[b]	R^2 with own cluster	R^2 with next cluster	Structure Loading
Factor 1: Disruption (alpha = .84)					
Starts fights and arguments	.61	.61	.53	.19	.72
Demands to be in charge	.60	.63	.45	.10	.67
Tattles	.46	.47	.31	.08	.56
Destroys others' things	.57	.53	.54	.26	.73
Verbally offends others	.58	.55	.58	.25	.76
Cries, whines, shows temper	.52	.53	.36	.11	.60
Grabs others' things	.48	.53	.38	.12	.62
Disrupts the play of others	.63	.61	.56	.24	.75
Is physically aggressive	.45	.53	.18	.02	.42
Is disruptive during transition	.42	.44	.29	.11	.54
Factor 2: Disconnection (alpha = .81)					
Is rejected by others	.47	.44	.36	.20	.60
Hovers outside play group	.45	.50	.21	.06	.46
Withdraws	.57	.57	.51	.17	.71
Wanders aimlessly	.61	.64	.44	.15	.67
Is ignored by others	.65	.68	.55	.20	.74
Refuses to play when invited	.55	.55	.46	.11	.68
Needs help to start playing	.53	.55	.40	.10	.64
Confused in play	.54	.53	.42	.15	.65
Seems unhappy	.44	.42	.30	.11	.54
Factor 3: Interaction (alpha = .74)					
Helps other children	.50	.51	.35	.05	.59
Shares toys with others	.49	.53	.30	.08	.55
Helps settle peer conflicts	.49	.54	.31	.00	.56
Disagrees without fighting	.40	.51	.34	.04	.58
Directs others' action politely	.49	.54	.29	.00	.54
Encourages others to join play	.52	.53	.36	.05	.60
Comforts others when hurt	.58	.59	.42	.07	.65
Verbalizes stories during play	.40	..46	.34	.07	.58
Shows positive emotion during play (e.g., smiles, laughs)	.44	.54	.37	.04	.61
Shows creativity in making up play stories and activities	.48	.49	.40	.05	.59

Notes: $N = 297$.
[a]Entries are rotated loadings
[b]Entries represent promaxian loadings at $k = 3$ power
[c]Entries are based on oblique, principle-components, cluster analyses (Harman, 1976), where hypothesized item-cluster membership is determined through prior exploratory factor and item analyses. *R* for an item's *own* cluster indicates the proportion of item variance predicted by other items in the hypothesized correct cluster, whereas R for an item' *next* cluster indicates variance predicted by items in the empirically best alternative cluster.

Finally, the degree of overlap between the two measures was assessed using redundancy analysis.

Construct Validity

To determine the construct validity of the parent version of the 32-item PIPPS with African American Head Start children, a series of common factor analyses was performed using both orthogonal (varimax, equamax) and oblique (promax) solutions[2]. The exploratory factor analyses revealed the same three-factor solution as the teacher structure: Play Disruption, Play Disconnection, and Play Interaction. Table 2 presents the item content and factor loadings for each of these factors. The three factor varimax solution was selected because it best satisfied multiple criteria for retention. First, the three factors were within the limit indicated by Cattell' s (1966) scree plot. Second, each of the three factors accounted for greater than 5% of the total variance. Third, each of the three factors had an eigenvalue greater than one. Fourth, this solution resulted in the lowest interfactor correlations. Finally, each construct demonstrated reliability with Cronbach alphas of .84, .81, and .74, respectively. Additionally, 29 of the 32 items (91%) loaded appreciably on only one dimension.[3]

Integrity of the proposed solution was substantiated through cross-validation and confirmatory analyses. The large sample used for the above analyses was bifurcated randomly to assess the degree to which the final three-factor solution would replicate across two independent samples. The analyses conducted with each subgroup also supported a three-dimensional structure. Subsequently, the degree of congruence across the final factor solutions derived from the total and two bifurcated samples was statistically analyzed using the Wrigley-Neuhause coefficient of factorial congruence. The Wrigley-Neuhause coefficient was identified in a recent review as one of the best methods for empirically examining the factor structures from two exploratory factor analyses (Gaudognoli & Velicer, 1991). This well-regarded method involves comparisons across every possible combination of factors, yielding two types of coefficients: one that shows the extent of similarity across factors and, conversely, one that shows the degree of dissimilarity. High levels of congruence (coefficients = .98) were found for like factors in comparisons between each subgroup and the large sample. Coefficients for unlike factors were low (coefficients .38), indicating a lesser degree of congruence.

In order to confirm composition of the final three factors with the total sample, the 32 items retained during exploratory analyses were subjected to confirmatory analyses (Harman, 1976). The purpose of confirmatory analyses was to compare other possible factor structures to the empirically derived factor structure to determine if the alternative structures were more statistically acute. The results of these analyses showed that none of the items shifted from their original factor, confirming that the empirically derived factor structure was superior.

Table 3. Correlation matrix for the Penn Interactive Peer Play Scale (PIPPS) parent and teacher factors

	Teacher Factors		
Parent Factors	**Play Interaction**	**Play Disconnection**	**Play Disruption**
Play Interaction	.36***	-.24**	-.21*
Play Disconnnection	-.12	.25**	.18*
Play Disruption	-.08	.08	.24**

Notes: $^{*}p < .01$, $^{**}p < .001$ $^{***}p < .0005$
$N = 297$.

Relationship between the Parent and Teacher Versions of the PIPPS

After obtaining a reliable parent structure, this factor solution was compared to the teacher structure. Wrigley-Neuhause coefficients were once again computed to assess the degree of congruity between the hypothesized like and unlike factors of the parent and teacher versions (i.e., the 3-factor parent and the 3-factor teacher PIPPS). The analyses showed significantly high levels of congruence (coefficients $\geq$ = .88) for like factors and low congruence coefficients for unlike factors (coefficients $\leq$.26), supporting the factoral congruence between versions. Next, bivariate and multivariate correlational analyses were conducted to further assess the parent-teacher relationship. Significant correlations were expected between each corresponding factor for the parent and teacher versions (i.e., Play Interaction-parent correlates with Play Interaction-teacher). Table 3 presents the bivariate correlational matrix that confirms congruence between the parent and teacher factors. Play Interaction

parent and teacher was the highest correlation (r = .36; $p \leq$ .0001) followed by the Play Disconnection factors (r = .25; $p \leq 5$ .0005) and the Play Disruption factors (r = .24; $p \leq$.0009).

In addition to bivariate correlations, canonical variance analysis was used to corroborate our findings of three PIPPS dimensions across both the parent and teacher versions. This multivariate procedure examines all 6 factors simultaneously such that (a) the different divergent and convergent relationships *between* the one set and the other set emerge, and (b) the picture is not confounded by inattention to the redundant relationships among the variables *within* either of the sets (Weiss, 1972). Table 4 reports the loadings for the parent and teacher versions of the PIPPS based on the variate pairs associated with three significant canonical correlations (canonical r = .38, .27, and .21). The Interaction variate contains the greatest overlap between the Play Interaction dimension of both the parent and teacher PIPPS. The greatest overlap in the Disconnection variate was evidenced between the Play Disconnection dimension on both versions. For the Disruption variate, the Play Disruption dimension of the parent and teacher PIPPS showed the highest loadings. Squared canonical correlations indicated that the Interaction variate accounted for the largest amount of overlapping variance (14%) between the two

Table 4. Canonical Structure of the Penn Interactive Peer Play Scale (PIPPS) parent and teacher versions

	Canonical Variate Set		
Variable	**Interaction**	**Disconnection**	**Disruption**
Parent Dimensions			
Play interaction	.97	-.19	.14
Play disruption	-.38	-.06	.92
Play disconnection	-.28	.82	.50
Teacher Dimensions			
Play interaction	.93	-.26	.28
Play disruption	-.61	.14	.78
Play disconnection	-.56	.83	.03

Note: $N = 297$.

measures, indicating the PIPPS' ability to capture children's competencies in interactive peer play.

Finally, redundancy analyses were conducted to determine the degree of similarity between the parent and the teacher PIPPS factors. Canonical redundancy statistics provide information regarding the amount of overlapping variance between the two measures. Analyses revealed that the parent PIPPS dimensions could account for 10.2% of the variance in the teacher PIPPS dimensions, while the teacher PIPPS constructs could account for 8.9% of the parent PIPPS constructs (Wilks' lambda = .76, F(9, 458) = 6.05, $p \leq$.0001).

DISCUSSION

The fmdings of this study support the use of the parent version of the PIPPS for the assessment of preschool children's peer play behaviors. A reliable three-factor solution was obtained with African American Head Start children, providing support for three constructs of interactive peer play: Play Interaction, Play Disruption, and Play Disconnection. These constructs are identical to those obtained from prior studies investigating the reliability and validity of the teacher version of the PIPPS (Coolahan et al., 1998; Fantuzzo et al., 1995; Fantuzzo et al., 1998). Additionally, the parent version of the PIPPS was validated within this study by the teacher version of the PIPPS. First, factor-matching analyses demonstrated congruence between the three PIPPS parent and teacher constructs. Also, canonical correlation analysis revealed three significant variate pairs each comprised of the corresponding parent and teacher PIPPS factor. This cross-validation documents the capability of the PIPPS assessment to obtain information about the same constructs of interactive peer play for preschool children across home and school environments. This study is also the first demonstration of congruence

between parent and teacher reports of social competence constructs for preschool children within the context of play.

The psychometric soundness of this parent rating scale is consistent with assertions in the literature that parents can be accurate reporters of their children's behavior and should be included in the assessment process (Diamond & Squires, 1993; Lochman et al., 1995). In general, research investigating the validity of parent report data has been mixed. Some studies, including the present investigation, have found parental report to be reliable and valid (Lochman et al., 1995; Sexton, Miller & Rotatori, 1985). Findings from other studies revealed that less reliable information was obtained from parents, particularly parents of low-income and less educated backgrounds (Frankenberg, Coons & Ker, 1982; Sturner, Funk, Thomas & Green, 1982). This latter set of studies questioned the validity of parent report data, and categorized discrepancies between parents and teachers or professionals as parental bias or error (Fagot, 1995; Sexton, Thompson, Perez & Rheams, 1990).

More recently, researchers have found greater matches between multiple raters when reports involve current and concrete children's behaviors (Diamond & Squires, 1993). Parents have successfully reported on motor and social functioning of their children, and have had greater difficulty with reports concerning cognitive or language tasks (Schafer, Bell and Spaulding, 1987). Diamond and LeFurgy (1992) also obtained higher levels of agreement between parents and professionals on motor rather than cognitive tasks. Additionally, in keeping with appropriate standards for test development, researchers have found that when parents provide more reliable information when they (a) fully understand the assessment items and (b) have had prior opportunity to observe the children's behaviors (Squires, Nickel & Bricker, 1990).

In light of this research, several factors related to the development of the PIPPS are believed to have contributed to its success in capturing parents' observations of their children. First, great emphasis was placed on the coconstruction of the PIPPS measure with both parents and teachers within Head Start. This partnership process strengthened the content validity of this scale for both parents and teachers by ensuring that a common language was used in creating PIPPS items to describe play behaviors. Second, the PIPPS items were derived inductively from naturalistic observations of children's play with peers. Ethological research methods were used to obtain a descriptive data base of typical behaviors for this group of low- income, minority children to inform the content validity of PIPPS' items (Pelligrini, 1992). These methods maximized the likelihood that parents were asked to rate play behaviors they actually had an opportunity to observe (Squires et al., 1990). Selecting items that are based on prior experiences and that are sensitive to the cultural backgrounds of the intended test-taking population is also consistent with the test development standards outlined by the American Psychological Association (Standard 3.5; American Psychological Association, 1985).

After establishing cross-validation for the constructs of the parent and teacher PIPPS, our goal was to examine the degree of overlap between parents and teachers. The results show that there is a significant, but relatively low, degree of similarity between parent and teacher reports of play at home and at school. Two explanations have been offered in the developmental literature to account for the degree of overlap between parent and teacher reports of peer play behavior. One explanation relates to the differential information available to parents and teacher concerning emergent abilities. Diamond & Squires (1993) posit that discrepancies between parents and professionals are likely to occur during transitional periods of development, when children are beginning to acquire new competencies. They argue that parents may have unique access to emerging competencies of their children that are not yet generalized to other settings such as school, and thus are unlikely to be reflected in professional or teacher assessments.

Second, in addition to the distinct information available to parents, an equally important consideration is the unique contribution of context to parent and teacher reports of play. Specifically, the overlapping variance may be a reflection of the degree of continuity or discontinuity between home and school environments of low-income, minority families (Slaughter-Defoe, 1995). If great continuity exists between home and school, then a low degree of overlap could be conceptualized as the unique contributions of parents with respect to their child's needs and strengths. Indeed, some research has demonstrated that parent report data actually increases the

precision of screening mechanisms for detecting children at risk for behavior problems (Lochman et al., 1995). However, in environments that have high potential for discontinuity, researchers must also explore the lack of continuity as a credible factor for discrepancies between parent and teacher reports. Children's capacities from their cultural or familial background may not be appreciated or nurtured within a school environment (Williams, 1991). As interventions work towards increasing continuity between home and school for low-income minority children, the degree of overlap between parents and teachers could be an indicator of success in building connections between home and school contexts.

A major implication that can be drawn from this discussion of continuity is the importance of studying the process of *how* to obtain information about matched constructs across environments. By moving towards the tension created by discontinuity, researchers can refine the understanding of factors that contribute to parents' ability to provide reliable information regarding their children's strengths and weaknesses. It seems probable that scale development efforts that fail to yield congruent parent and teacher measurement may not have generated a common language across scales, as reflected by the items and constructs (Fantuzzo, Manz & McDermott, in press; Manz, Fantuzzo & McDermott, in press). The development of the PIPPS provides an example of working with parents to construct meaningful ways for them to communicate their input about important developmental competencies (Fantuzzo et al., 1995, Fantuzzo et al., 1998). Clearly, increased access to parental input is essential to obtain an accurate picture of peer play interactions (Haager & Vaughn, 1995). Furthermore, the increased opportunities created by the assessment process for parent-teacher communication are critical to increasing parental involvement in their children's education.

Parental involvement in children's early school experiences is considered a fundamental component for promoting positive school adjustment (Becher, 1984; Henderson & Berla, 1994). Head Start and other organizations are calling for greater parent participation in the classroom, as well as more research on factors contributing to increased parental involvement (Taylor & Machida, 1994; U.S. Department of Health and Human Services, 1993). The success of parental involvement depends upon a collaborative relationship between parents and teachers, based upon mutual respect and influence (U.S. Department of Education, 1994). Through forming partnerships with parents and incorporating their views into the classroom, early education programs can begin to bridge discontinuity between the home and school contexts. The PIPPS represents one example of starting a dialogue and sharing knowledge between parents and teachers about important emerging developmental competencies in preschool children. This common information can also become the foundation for coconstructed programming that addresses the needs of Head Start children. An example of a successful peer- mediated strategy that was derived from the PIPPS development process was the resilient peer treatment intervention (RPT; Fantuzzo et al., 1996). RPT used the development of the parent and teacher PIPPS rating scales to identify socially competent peers and resourceful parent volunteers. Next the strengths of these competent members of the Head Start community were incorporated into a classroom intervention designed to enhance the social competence of withdrawn preschool children. This research demonstrated the manifold resources that parents can contribute to successful classroom methods.

Future research with the PIPPS should continue to address discontinuity, including the manner in which peer play competencies and difficulties may change as a function of context. In order to study contextual influences, naturalistic observations of play behaviors of Head Start children should be conducted within home and neighborhood settings. Home observations would also contribute additional information for establishing further concurrent validity for the parent version of the PIPPS. The PIPPS parent scales and observational data of children's play could also be used to further examine the important relationship between parenting styles and children's peer play behaviors, as well as specific child and family characteristics that help explain children's play strengths and needs.

Continued reliance upon an ethological approach to research, such as this study's methodology, will likely add to our understanding of social competence among preschool children. Within this investigation, ethological methods uncovered constructs of children's socially competent behavior and needs in play that can be observed and rated by both parents and teachers. An important challenge for future research is to further refine our

understanding of play interaction, disconnection and disruption, and possibly reveal more specific components of these global orientations within play. For example, recent refinements utilizing teachers as primary reporters have yielded subtypes of withdrawn behavior (i.e., Ladd & Profilet, 1996) and aggressive behavior (i.e., LaFreniere & Dumas, 1995) among elementary school children. An empirical question that merits further study is the presence of these or other subdivisions of socially competent, withdrawn, and disruptive behavior with preschool children. Ethological methods will also add to our understanding about parents' and teachers' abilities to detect subdivisions within these global constructs of children's play with peers.

Research that pursues and incorporates information from parents is likely to reap benefits for early childhood educational programs and families concerned with preparing children for school entry (Sarason, 1995). Such efforts, which clearly include parents in the co-construction of measurement, are likely to yield reliable and valid parent report, as well as foster communication between home and school. In sum, a new agenda of research that develops measures using a common language derived from parents and teachers holds great promise for informing school readiness initiatives and bridging discontinuity for young, vulnerable children.

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NOTES

1. This does not mean that parent and teacher reports of peer play are hypothesized to be identical. Rather, we intend for the same constructs of peer play to emerge independently from each version of the measure. This allows for a comparison of identical constructs, although not necessarily the same amount or levels of peer play across home and school.
2. Squared multiple correlations were used as the initial communality estimates for the common factor analyses. Additionally, promax rotations were run at varying levels of power, k = 3, 5, 7, and each oblique solution was compared to the final orthogonal solution to determine the most parsimonious explanation.
3. Two items did not load appreciably on any of the three factors. They were "Does not take turns," and "Needs parent's direction." These items were confusing to the parents. The first involved a double negative and the second lack specificity. One item loaded appreciably on both the Disruption and Disconnection factors—"Rejects the play ideas of others." This behavior fits both factors.

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